

Individual Lake Results



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From October 1, 2003 to October 31, 2004, citizen volunteers monitored 53 lake sites throughout King County (Table 3-1). The results of their work are reported as individual subsections within Section Three for each lake monitored, in alphabetical order.

Information on location, watershed and lake morphology are summarized for each lake (Table 3-2), along with public access and some recreational information. Bathymetric and watershed maps in pdf format for many of these lakes can be found in an on-line document on the Lake Stewardship Web site at http://dnr.metrokc.gov/wlr/waterres/smlakes/lkmon_03.htm.

Physical data such as precipitation, water level, Secchi transparency, and surface temperature are presented as line plots over the water year. Precipitation events are plotted as bars on the same chart for direct comparisons between large-scale rainfall and short-term increases in water level. Level I and Level II measurements are plotted in the same charts for both Secchi depth and temperature, but have different symbols in order to differentiate data collected by different volunteers.

Chemical and biological data, including chlorophyll a, total phosphorus, and total nitrogen, are plotted by date throughout the sampling season. Nitrogen and phosphorus are plotted on the same chart, but with different scales, to show their relationships over time.

There were two dates on which profile data was collected, and these data have been included in a table for each lake rather than plotted with the temporal series.

Phytoplankton counts were not completed for all sample dates, but all were examined for species composition. Commonly occurring or characteristic species are presented in accompanying tables or discussed in the text.

Tables that report data for each lake, which in previous annual reports were contained in appendices to the report, have been incorporated in each lake subsection. There are one or two tables for each lake, depending on participation in Level I and Level II monitoring.

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The Level I table reports physical data collected daily or weekly throughout the year, as well as other observations. Daily data is organized into weekly averages for lake levels and weekly summations for precipitation. If a significant number of values were missing from a particular week and interpolations could not be made, the data are not reported for that week. The original data sheets have been retained and the data entered in electronic format, which can be provided upon request.



The Level II table reports the analytical sample results for each date in the sampling season for the 1m samples, as well as physical measurements and observations. Most of the results were within reasonable bounds of variability, but several analyses had to be repeated and may be flagged with a cautionary note. The calculated trophic state indicators are also listed, as well as the N:P ratios for each sample date.

Many monitors rated algae and particle concentrations in 2004, and this is reported in the table under Algae Observations. The Secchi disc was lowered 6" under the water surface and a rough estimate of particles visible in the 2 white sections was made. At 6" depth, the two sections correspond to a total of 2 liters of water volume. A zero corresponded to no particulate algae seen in the water, while a 1 meant less than 10, a 2 between 10 and 100, and 3 corresponded to greater than 100. This exercise was not meant to be a quantitative measurement, but rather as a general indication of how many particles were present at a particular time.



Counts of geese present on each lake were an optional measure that volunteers could make, since goose populations may contribute to problems on some lakes. Volunteers could choose either to report the most geese they saw at one time on the day they sampled the lake or the most geese they saw at any one time on a weekly basis. No summing of goose observations over time was done.

Bird counts other than Canada geese, aquatic plant, and boat information are not presented in the tables, but the original data has been retained and can be made available by request.

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Lakes with volunteers in 2004 and level of data collection

2004 PARTICIPATION Lake Name	LEVEL I Weekly	LEVEL I Daily	LEVEL II Biweekly
Alice			X
Allen	3,4	3,4	X
Ames	X	X	X
Angle	X	X	X
Beaver-1			X
Beaver-2	X	X	X
Bitter			X
Boren	X	X	X
Burien			X
Clark			X
Cottage	X	X	X
Desire	X	X	X
Echo (Shoreline)	1	1,2	X
Echo (Snoqualmie)	3,4	3,4	X
Fenwick			X
Fivemile			X
Francis	1	precip	X
Geneva	X	X	X
Grass	X	X	X
Haller	X	X	X
Horseshoe		precip	X
Jones			X
Joy	X	X	X
Kathleen	X	X	X
Killarney			X
Killarney-North	3	3	X
Langlois			X
Leota	X	X	X
Lucerne			X
Marcel	X	X	X
Margaret	X	X	X
McDonald		X	X
Meridian	X	X	X
Mirror	X	X	X
Morton	X	X	X
Neilson (Holm)	X	X	X
North	X	X	X
Paradise	3	3	X
Peterson Pond	X	3,4	X
Pine	X		X
Pipe		precip	X
Sawyer		1,2,3	X
Shadow		X	X
Shady	X	X	X
Spring	X	X	X
Star			X
Steel	X	X	X
Trout		X	X
Twelve	X	X	X
Walker	X	X	X
Welcome			X
Wilderness	X	X	X
Yellow	1,3		X

Note: For Level I data, an X indicates the lake was monitored for all four quarters (1: Oct.-Dec.; 2: Jan.-Mar.; 3: Apr.-Jun.; 4: Jul.-Sept.). For Level II data, the X indicates participation during that year for more than 1 date.

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Location, size, access and recreational information

Lake Name	Location	Watershed (Acres)	Lake Area (Acres)	Mean Depth (Feet)	Max Depth (Feet)	Public Park	Boat Launch	Fish Present
Alice	2.5 miles S of Fall City	184	32	8	30	no	yes	ST,B,O
Allen	NE border of Sammamish	230	11	---	---	no	no	---
Ames	1.5 miles W of Carnation	1133	80	18	28	no	no	---
Angle	SeaTac	478	102	25	52	yes	yes	ST,B,O
Beaver 1	Sammamish	324	12	22	55	no	no	---
Beaver 2	Sammamish	1037	62	21	54	yes	yes	ST,B,O
Bitter	North Seattle	331	19	16	31	yes	CT	ST,B,O
Boren	Newcastle	660	15	18	34	yes	CT	ST,O
Burien	Burien	230	44	13	29	no	no	---
Clark	2.5 miles E of Kent	339	8	---	---	yes	CT	---
Cottage	1.5 miles E of Woodinville	4275	63	15	25	yes	CT	ST,B,O
Desire	4 miles NW of Maple Valley	865	72	13	21	yes	yes	ST,B,O
Echo (in Shoreline)	Shoreline	288	12	14	30	yes	CT	ST,O
Echo (nr Snoqualmie)	S of I-90 and E of Hwy 18	360	20	---	---	no	no	---
Ferwick	Kent	580	22	13	31	yes	yes	ST,B,O
Fivemile	1 mile E of Federal Way	593	38	18	32	yes	CT	ST,B
Francis	2 miles N of Maple Valley	377	20	4	9	no	no	---
Geneva	0.2 miles E of federal Way	198	29	19	46	yes	yes	ST,B
Grass	0.5 mi N of Lake Morton	160	15	---	---	no	no	---
Haller	North Seattle	260	15	---	36	no	CT	ST,B,O
Horseshoe	0.5 miles W of Black Diamond	256	10	---	---	no	no	---
Jones	Black Diamond	954	22	4	7	no	no	---
Joy	3 miles N of Carnation	468	105	23	50	yes	no	---
Kathleen	2.2 miles E of Renton	304	39	7	22	no	no	---
Killarney	E border of Federal Way	185	31	9	15	yes	yes	ST,B,O
Langlois	1.25 miles east of Carnation	226	39	53	98	no	yes	ST,O
Leota	Woodinville	482	10	12	24	no	no	---
Lucerne	Maple Valley	409	16	18	37	no	no	---
Marcel	3 miles N of Carnation	1290	33	---	17	no	no	---
Margaret	4.25 miles NE of Duvall	1777	53	18	43	no	yes	ST,B
McDonald	2.8 miles E of Renton	82	18	23	47	no	no	---
Meridian	Kent	726	150	41	90	yes	yes	ST,B,O
Mirror	Federal Way	168	19	12	27	no	no	---
Morton	2 miles W of Black Diamond	250	66	15	23	no	yes	ST,B
Neilson (Holm)	2.5 miles E of Auburn	166	19	18	31	no	yes	ST,B
North	E border of Federal Way	425	55	14	34	no	yes	ST,B,O
Paradise	2 miles E of Woodinville	2419	18	17	28	no	no	---
Peterson Pond	3 miles E of Redmond	1314	7	---	---	no	no	---
Pine	Sammamish	469	88	20	39	yes	CT	ST,B,O
Pipe	Maple Valley/Covington	313	52	27	65	no	no	---
Sawyer	Black Diamond	8120	279	26	58	yes	yes	ST,B,O
Shadow	1 mile N of Covington	310	50	22	45	no	yes	ST,B,O
Shady	3.5 miles NW of Maple Valley	197	21	21	40	no	yes	ST,B
Spring (Otter)	3 miles NW of Maple Valley	443	68	19	32	yes	yes	ST,B,O
Star	0.1 mile E of Federal Way	376	34	25	50	no	yes	ST,B,O
Steel	Federal Way	254	46	13	24	yes	yes	ST,B
Trout	0.3 miles W of Pacific	1016	18	17	27	no	yes	ST,B
Twelve	0.5 miles NE of Black Diamond	449	41	13	28	no	yes	ST,B,O
Walker	1 mile E of Nolte State Pk	131	12	17	---	no	yes	ST,O
Welcome	2.55 miles NE of Redmond	573	17	---	---	no	no	---
Wilderness	Maple Valley	328	67	21	38	yes	yes	ST,B,O
Yellow	3 miles N of Issaquah	287	11	---	---	yes	no	---

CT = car top boats, no ramp
O = other fish

ST = stocked trout
B = bass